Patent claims:

We claim:

- 1. A method for for treating pain, in a patient in need thereof, comprising administering to such patient a pharmaceutically effective amount of an IκB-kinase inhibitor.
 - 2. The method according to claim 1, wherein the I κ B-kinase inhibitor is a compound of formula I

$$\begin{array}{c|c} & & & \\ & & & \\ R^5 & & \\ \hline R^1 & & \\ \end{array} \hspace{1cm} (I)$$

10

5

or a stereoisomeric form thereof or a mixture of stereoisomeric forms in any ratio, or a physiologically tolerated salt thereof, wherein,

E is N, or a radical -C(R¹⁹)-, wherein, R¹⁹ is hydrogen or radical R⁹, wherein,

15

20

25

R9 is a characteristic radical of an amino acid,

aryl, wherein the aryl is optionally substituted,

heteroaryl having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, wherein the heteroaryl is optionally substituted,

heterocycle having 5, 6, 7, 8, 9, 10, 11, or 12 ring members, wherein the heterocycle is optionally substituted, or

-(C_1 - C_6)-alkyl, wherein the alkyl is straight-chained or branched and is optionally substituted one, two or three times, independently of each other, by aryl, wherein the aryl is optionally substituted, heteroaryl having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, wherein heteroaryl is optionally substituted, heterocycle having 5, 6, 7, 8, 9, 10, 11, or 12 ring members, wherein the heterocycle is optionally substituted, -O- R^{11} , =O, halogen, -CN, -CF₃, -S(O)_x- R^{11} , wherein x is zero, 1 or 2, -C(O)-O- R^{11} , -C(O)-N(R^{11})₂, -C(O)- R^{11} , -N(R^{11})₂, -(R^{11})₂, -C(O)-C₃- R^{11} , a radical of formula

wherein,

R¹¹ is hydrogen,

30

- (C_1-C_6) -alkyl, wherein the alkyl is optionally substituted one, two or three times by aryl, wherein the aryl is optionally substituted, heteroaryl having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, heterocycle having 5, 6, 7, 8, 9, 10, 11, or 12

ring members, halogen, -N- $(C_1-C_6)_n$ -alkyl, wherein n is zero, 1 or 2 and the alkyl is optionally substituted one, two or three times, independently of each other, by halogen or -C(O)-OH, -O- (C_1-C_6) -alkyl or -C(O)-OH,

aryl, wherein aryl is optionally substituted,

heteroaryl having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, or heterocycle having 5, 6, 7, 8, 9, 10, 11, or 12 ring members, and

wherein, the case of (R¹¹)₂, each R¹¹, independently of each other, is hydrogen,

-(C_1 - C_6)-alkyl, wherein alkyl is optionally substituted one, two or three times by aryl, wherein the aryl is optionally substituted, heteroaryl having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, heterocycle having 5, 6, 7, 8, 9, 10, 11, or 12 ring members, halogen, -N-(C_1 - C_6)_n-alkyl, wherein n is zero, 1 or 2 and the alkyl is optionally substituted one, two or three times, independently of each other, by halogen or -C(O)-OH, -O-(C_1 - C_6)-alkyl or -C(O)-OH,

aryl, wherein aryl is optionally substituted, or

heteroaryl having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members;

at least one of R1, R2, R3 and R4 is, a radical of formula II,

$$\begin{array}{c|c}
 & Z \\
 & R^8 & R^9
\end{array}$$
(II)

20

30

35

5

10

15

wherein,

D is -C(O)-, -S(O)- or $-S(O)_2$ -;

25 \mathbb{R}^8 is hydrogen or $-(\mathbb{C}_1-\mathbb{C}_4)$ -alkyl;

R9 is a characteristic radical of an amino acid,

aryl, wherein the aryl is optionally substituted,

heteroaryl having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, wherein the heteroaryl is optionally substituted,

heterocycle having 5, 6, 7, 8, 9, 10, 11, or 12 ring members, wherein the heterocycle is optionally substituted, or

-(C_1 - C_6)-alkyl, wherein the alkyl is straight-chained or branched and is optionally substituted one, two or three times, independently of each other, by aryl, wherein the aryl is optionally substituted, heteroaryl having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, wherein heteroaryl is optionally substituted, heterocycle having 5, 6, 7, 8, 9, 10, 11, or 12 ring members, wherein the

heterocycle is optionally substituted, -O-R¹¹, =O, halogen, -CN, -CF₃, -S(O)_x-R¹¹, wherein x is zero, 1 or 2, -C(O)-O-R¹¹, -C(O)-N(R¹¹)₂, -C(O)-R¹¹, -N(R¹¹)₂, -(C₃-C₆)-cycloalkyl, a radical of formula

5 wherein,

10

15

20

25

30

R¹¹ is hydrogen,

-(C_1 - C_6)-alkyl, wherein alkyl is optionally substituted one, two or three times by aryl, wherein the aryl is optionally substituted, heteroaryl having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, heterocycle having 5, 6, 7, 8, 9, 10, 11, or 12 ring members, halogen, -N-(C_1 - C_6)_n-alkyl, wherein n is zero, 1 or 2 and the alkyl is optionally substituted one, two or three times, independently of each other, by halogen or -C(O)-OH, -O-(C_1 - C_6)-alkyl or -C(O)-OH,

aryl, wherein aryl is optionally substituted, heteroaryl having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, or heterocycle having 5, 6, 7, 8, 9, 10, 11, or 12 ring members, and

wherein, the case of (R¹¹)₂, each R¹¹, independently of each other, is hydrogen,

-(C_1 - C_6)-alkyl, wherein alkyl is optionally substituted one, two or three times by aryl, wherein the aryl is optionally substituted, heteroaryl having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, heterocycle having 5, 6, 7, 8, 9, 10, 11, or 12 ring members, halogen, -N-(C_1 - C_6)_n-alkyl, wherein n is zero, 1 or 2 and the alkyl is optionally substituted one, two or three times, independently of each other, by halogen or -C(O)-OH, -O-(C_1 - C_6)-alkyl or -C(O)-OH,

aryl, wherein aryl is optionally substituted, or heteroaryl having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members;

Z is aryl, wherein the aryl is optionally substituted,

heteroaryl having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, wherein the heteroaryl is optionally substituted,

heterocycle having 5, 6, 7, 8, 9, 10, 11, or 12 ring members, wherein the heterocycle is optionally substituted,

-(C₁-C₆)-alkyl wherein the alkyl is optionally substituted.

- $-C(O)-R^{11}$,
- -C(O)-O-R¹¹,
- 35 -C(O)-N(R¹¹)₂; or wherein, the radical of formula II. or

i) R⁸ and R⁹ form, together with the nitrogen and carbon to which they are bonded, a heterocyclic ring of formula IIa.

5

wherein,

D is
$$-C(O)$$
-, $-S(O)$ - or $-S(O)_2$ -;

10

15

Z is aryl, wherein the aryl is optionally substituted,

heteroaryl having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, wherein the heteroaryl is optionally substituted,

heterocycle having 5, 6, 7, 8, 9, 10, 11, or 12 ring members, wherein the heterocycle is optionally substituted,

-(C₁-C₆)-alkyl wherein the alkyl is optionally substituted,

 $-C(O)-R^{11}$,

 $-C(O)-O-R^{11}$, or

 $-C(O)-N(R^{11})_2;$

20

A is nitrogen or the radical -CH2-;

B is oxygen, sulfur, nitrogen or the radical -CH2-;

X is oxygen, sulfur, nitrogen or the radical -CH2-;

25

Y is selected from a bond, oxygen, sulfur, nitrogen, and radical -CH2-, or

X and Y together form a phenyl, 1,2-diazine, 1,3-diazine, or 1,4-diazine radical, wherein,

30

the ring system formed by N, A, X, Y, B and carbon cannot contain more than one oxygen, X is cannot be oxygen, sulfur, or nitrogen when A is nitrogen, the ring system does not contain more than one sulfur atom, and contains 1, 2, 3 or 4 nitrogen, and, the oxygen and sulfur are not present simultaneously,

and wherein,

35

the ring system formed by N, A, X, Y, B and carbon is optionally substituted, one, two or three times, independently of each other, by $-(C_1-C_8)$ -alkyl, wherein the alkyl is optionally substituted,

one or two times, by -OH, -(C_1 - C_8)-alkoxy, halogen, -NO₂, -NH₂, -CF₃, methylenedioxyl, -C(O), -C(O)-CH₃, -(C_1 - C_4)-alkoxycarbonyl, -CN, -C(O)-OH, -C(O)-NH₂, tetrazolyl, phenyl, phenoxy, benzyl or benzyloxy; or

5 ii) R⁹ and Z form, together with the carbon atoms to which they are in each case bonded, a heterocyclic ring of the formula IIc,

wherein,

15

20

25

30

35

D is -C(O)-, -S(O)- or $-S(O)_2$ -;

 \mathbb{R}^8 is hydrogen or -(\mathbb{C}_1 - \mathbb{C}_4)-alkyl;

R11 is hydrogen,

-(C_1 - C_6)-alkyl, wherein the alkyl is optionally substituted one, two or three times by aryl, wherein the aryl is optionally substituted, heteroaryl having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, heterocycle having 5, 6, 7, 8, 9, 10, 11, or 12 ring members, halogen, -N-(C_1 - C_6)_n-alkyl, wherein n is zero, 1 or 2 and the alkyl is optionally substituted one, two or three times, independently of each other, by halogen or -C(O)-OH, -O-(C_1 - C_6)-alkyl or -C(O)-OH,

aryl, wherein aryl is optionally substituted, heteroaryl having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, or heterocycle having 5, 6, 7, 8, 9, 10, 11, or 12 ring members;

T is oxygen, sulfur, nitrogen or radical -CH2-;

W is oxygen, sulfur, nitrogen or the radical -CH2-;

V is selected from a bond, oxygen, sulfur, nitrogen or the radical - CH_{2} ; or

T and V together form, or V and W together form a phenyl, 1,2-diazine,

1,3-diazine or 1,4-diazine radical, wherein, the ring system which is formed by N, T, V, W and two carbon atoms cannot contain more than one oxygen, cannot contain more than one sulfur and contains 1, 2, 3 or 4 nitrogen, wherein the oxygen and sulfur are not present simultaneously, and

wherein,

the ring system which is formed by N, T, V, W and two carbon is optionally substituted, one, two three times, independently of each other, by -OH, - (C_1-C_8) -alkoxy, halogen, - NO_2 , - NH_2 , - CF_3 , methylenedioxyl, -C(O), -C(O)- CH_3 , - (C_1-C_4) -alkoxycarbonyl, -CN, -C(O)-OH, -C(O)- NH_2 , tetrazolyl, phenyl, phenoxy, benzyl or benzyloxy; and

wherein,

5

15

25

30

35

the remaining R1, R2, R3 and R4 in each case are, independently of each other selected from

10 hydrogen,

halogen,

 $-(C_1-C_6)$ -alkyl,

heteroaryl having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, wherein the heteroaryl is optionally substituted,

heterocycle having 5, 6, 7, 8, 9, 10, 11, or 12 ring members, wherein the heterocycle is opyioally substituted,

 $-NO_2$,

-CN,

-O-(C₀-C₄)-alkylaryl,

 $-O-(C_1-C_4)$ -alkyl,

-OR¹¹,

 $-N(R^{11})_2$

-S(O)_r-R¹¹, wherein r is zero, 1 or 2, and

-CF₃;

R⁵ is hydrogen, -OH or =O; and

R⁶ is aryl, wherein aryl is optionally substituted,

phenyl, wherein the phenyl is substituted one or two times by -CN, -NO₂, -O-(C₁-C₄)-alkyl, -N(R¹¹)₂, -NH-C(O)-R¹¹, -S(O)₅-R¹¹, wherein the s is zero, 1 or 2, -C(O)-R¹¹ or -(C₁-C₄)-alkyl-NH₂, heteroaryl having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, wherein, the heteroaryl is optionally substituted one, two, or three times, or

heterocycle having 5, 6, 7, 8, 9, 10, 11, or 12 ring members, wherein, the heterocycle is optionally substituted one, two, or three times.

3. The method according to claim 2, wherein, for formula I,

E is N, or a radical -C(R¹⁹)-, wherein, R¹⁹ is hydrogen or radical R⁹,

5 wherein,

 R^9 is a characteristic radical of an amino acid wherein the amino acid is derived from a naturally occurring α -amino acids selected from alanine, valine, leucine, isoleucine, phenylalanine, tyrosine, tryptophan, serine, threonine, cysteine, methionine, asparagine, glutamine, lysine, histidine, arginine, glutamic acid or aspartic acid, or

a characteristic radical of an amino acid wherein the radical is derived from an amino acid which is not naturally occurring selected from 2-aminoadipic acid, 2-aminobutyric acid, 2-aminoisobutyric acid, 2,4-diaminobutyric acid, 2,3diaminopropionic acid, 1,2,3,4,-tetrahydroisoquinoline-1-carboxylic acid, 1,2,3,4tetrahydroisoquinoline-3-carboxylic acid, 2-aminopimelic acid, 3-(2thienyl)alanine, 3-(3-thienyl)alanine, sarcosine, pipecolic acid, 2-aminoheptanoic acid, hydroxylysine, N-methylisoleucine, 6-N-methyllysine, norleucine, Nmethylvaline, norvaline, ornithine, alloisoleucine, 4-hydroxyproline, allohydroxylysine, allothreonine, 3-hydroxyproline, 3-(2-naphthyl)alanine, 3-(1naphthylalanine), homocysteine, homophenylalanine, homocysteic acid, 2-amino-3-phenylaminoethylpropionic acid, 2-amino-3-phenylaminopropionic acid, homotryptophan, cysteic acid, 3-(2-pyridyl)alanine, 3-(3-pyridyl)alanine, 3-(4-pyridyl)alanine, phosphinothricin, 4-fluorophenylalanine, 3-fluorophenylalanine, 2-fluorophenylalanine, 4-chlorophenylalanine, 4-nitrophenylalanine, cyclohexylalanine, 4-aminophenylalanine, citrulline, 5-fluorotryptophan, 5-methoxytryptophan, methionine sulfone, methionine sulfoxide or -NH-NR¹¹-CON(R¹¹)₂, wherein,

R¹¹ is hydrogen,

15

10

20

25

30

or 2, $-O-(C_1-C_4)$ -alkyl, -C(O)-OH, $-C(O)-O-(C_1-C_4)$ -alkyl, $-NH-C(O)-(C_1-C_4)$ -alkyl, and tetrazolyl, heteroaryl, having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, wherein the heteroaryl is optionally substituted and derived from azepine, azetidine, benzimidazole, benzodioxolane, 2-benzofuran, benzothiazole, benzothiophene, 2benzothiophene, 2-benzoxazole, β-carboline, quinoxaline, quinazoline, quinoline, 2quinoxaline, cyclohepta[b]-5-pyrrole, diazepine, dihydropyridine, 3-hydroxypyrro-2,4-dione, imidazole, 4-imidazole, imidazolidine, imidazoline, indazole, indole, isoquinoline, isoindole, isothiazole, isothiazolidine, isoxazole, 2-isoxazolidine, isoxazolidine, isoxazolone, methylimidazole, 3-(N-methylpyrrolidine), morpholine, oxazole, 1,3,4-oxadiazole, oxadiazolidinedione, oxadiazolone, 5-oxo-4,5-dihydro-[1,3,4]oxadiazole, 5-oxo-1,2,4-thiadiazole, 1,2,3,5-oxathiadiazole-2-oxide, 1-oxo-1,2dihydro-3-isoquinol, phenylpyrrole, 5-phenyl-2-pyrrole, phthalazine, piperazine, piperidine, pyrazine, pyrazole, pyrazoline, pyrazolidine, pyrazoline, pyrazoline, pyrimidine, pyridine, pyridyl-N-oxide, 2-pyrrole, 3-pyrrole, pyrrolidine, pyrroline, 4,5,6,7-tetrahydro-2-indole, tetrahydrothienyl, tetrazole, thiadiazole, thiazole, thiomorpholine, thiophene, triazole, triazolone and triazole, wherein, the heteroaryl is optionally substituted one, two or three times by a radical derived from -C(O)-(C₁- C_4)-alkyl, -C(O), =O, $-NH-(C_1-C_4)$ -alkyl, $-NH-((C_1-C_4)$ -alkyl), $-(C_1-C_8)$ -alkyl, -(C₁-C₈)-alkoxy, halogen, nitro, amino, trifluoromethyl, hydroxyl, -CF₃, hydroxy-(C₁-C₄)-alkyl, methylenedioxy, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl, $-(C_1-C_4)$ -alkoxycarbonyl, phenyl, phenoxy, benzyl, benzyloxy, $-S(O)_x-R^{11}$, wherein x is zero, 1 or 2, $-O-(C_1-C_4)$ -alkyl, -C(O)-OH, $-C(O)-O-(C_1-C_4)$ alkyl, -NH-C(O)-(C₁-C₄)-alkyl or tetrazolyl, halogen, -N-(C₁-C₆)_n-alkyl, wherein n is zero, 1 or 2 and alkyl is optionally substituted one, two or three times, independently of each other, by halogen or -C(O)-OH, -O-(C₁-C₆)-alkyl, or -C(O)-OH,

aryl, wherein, the aryl is selected from anthryl, biphenylyl, 2-biphenylyl, 3-biphenylyl, 4-biphenylyl, fluorenyl, naphthyl, 1-naphthyl, 2-naphthyl and phenyl, wherein the aryl is optionally substituted one, two or three times independently of one another by a radical selected from $-C(O)-(C_1-C_4)$ -alkyl, -C(O), =O, $-NH-(C_1-C_4)$ -alkyl, $-NH-((C_1-C_4)$ -alkyl)₂, $-(C_1-C_8)$ -alkyl, $-(C_1-C_8)$ -alkoxy, halogen, nitro, amino, trifluoromethyl, hydroxyl, $-CF_3$, and hydroxy- $-(C_1-C_4)$ -alkyl, methylenedioxy, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl, $-(C_1-C_4)$ -alkoxycarbonyl, phenyl, phenoxy, benzyl, benzyloxy, $-S(O)_x$ - $-R^{11}$ wherein x is zero, 1 or 2, $-O-(C_1-C_4)$ -alkyl, -C(O)- $-O-(C_1-C_4)$ -alkyl, -NH-C(O)- $-(C_1-C_4)$ -alkyl, and tetrazolyl, or

heteroaryl, having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, wherein the heteroaryl is optionally substituted and derived from azepine, azetidine, benzimidazole, benzodioxolane, 2-benzofuran, benzothiazole, benzothiophene, 2-

5

10

15

20

25

30

benzothiophene, 2-benzoxazole, \u03b3-carboline, quinoxaline, quinazoline, quinoline, 2quinoxaline, cyclohepta[b]-5-pyrrole, diazepine, dihydropyridine, 3-hydroxypyrro-2,4-dione, imidazole, 4-imidazole, imidazolidine, imidazoline, indazole, indole, isoquinoline, isoindole, isothiazole, isothiazolidine, isoxazole, 2-isoxazolidine, isoxazolidine, isoxazolone, methylimidazole, 3-(N-methylpyrrolidine), morpholine, oxazole, 1,3,4-oxadiazole, oxadiazolidinedione, oxadiazolone, 5-oxo-4,5-dihydro-[1,3,4]oxadiazole, 5-oxo-1,2,4-thiadiazole, 1,2,3,5-oxathiadiazole-2-oxide, 1-oxo-1,2dihydro-3-isoquinol, phenylpyrrole, 5-phenyl-2-pyrrole, phthalazine, piperazine, piperidine, pyrazole, pyrazoline, pyrazoli pyrimidine, pyridine, pyridyl-N-oxide, 2-pyrrole, 3-pyrrole, pyrrolidine, pyrroline, 4,5,6,7-tetrahydro-2-indole, tetrahydrothienyl, tetrazole, thiadiazole, thiazole, thiomorpholine, thiophene, triazole, triazolone or triazole, wherein, the heteroaryl is optionally substituted one, two or three times by a radical derived from -C(O)-(C₁- C_4 -alkyl, -C(O), =O, $-NH-(C_1-C_4)$ -alkyl, $-NH-((C_1-C_4)$ -alkyl), $-(C_1-C_8)$ -alkyl, $-(C_1-C_$ C_8)-alkoxy, halogen, nitro, amino, trifluoromethyl, hydroxyl, -CF₃, hydroxy-(C_1 - C_4)alkyl, methylenedioxy, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl, $-(C_1-C_4)$ -alkoxycarbonyl, phenyl, phenoxy, benzyl, benzyloxy, $-S(O)_x-R^{11}$, wherein x is zero, 1 or 2, $-O-(C_1-C_4)$ -alkyl, -C(O)-OH, $-C(O)-O-(C_1-C_4)$ alkyl, -NH-C(O)-(C₁-C₄)-alkyl or tetrazolyl, and

wherein, the case of (R11)2, each R11, independently of each other, is hydrogen,

-(C₁-C₆)-alkyl, wherein alkyl is optionally substituted one, two or three times by aryl, selected from anthryl, biphenylyl, 2-biphenylyl, 3-biphenylyl, 4-biphenylyl, fluorenyl, naphthyl, 1-naphthyl, 2-naphthyl and phenyl, wherein the aryl is optionally substituted one, two or three times independently of one another by a radical selected from $-C(O)-(C_1-C_4)$ -alkyl, -C(O), =O, $-NH-(C_1-C_4)$ -alkyl, $-NH-((C_1-C_4)$ -alkyl)₂, $-(C_1-C_4)$ -alkyl)₂, $-(C_1-C_4)$ -alkyl)₂, $-(C_1-C_4)$ -alkyl)₃, $-(C_1-C_4)$ -alkyl)₄, $-(C_1-C_4)$ -alkyl)₅, $-(C_1-C_4)$ -alkyl)₆, $-(C_1-C_4)$ -alkyl)₇, $-(C_1-C_4)$ -alkyl)₈, $-(C_1-C_4)$ -alkyl)₈, $-(C_1-C_4)$ -alkyl)₉, $-(C_1-C_4)$ -alkyl)₁, $-(C_1-C_4)$ -alkyl)₁, $-(C_1-C_4)$ -alkyl)₂, $-(C_1-C_4)$ -alkyl)₃, $-(C_1-C_4)$ -alkyl)₄, $-(C_$ C_8)-alkyl, - (C_1-C_8) -alkoxy, halogen, nitro, amino, trifluoromethyl, hydroxyl, - CF_3 , hydroxy- (C_1-C_4) -alkyl, methylenedioxy, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl, -(C₁-C₄)-alkoxycarbonyl, phenyl, phenoxy, benzyl, benzyloxy, -S(O)_x-R¹¹ wherein x is zero, 1 or 2, -O-(C₁-C₄)-alkyl, -C(O)-OH, -C(O)- $O-(C_1-C_4)$ -alkyl, -NH-C(O)-(C_1-C_4)-alkyl, and tetrazolyl, heteroaryl, having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, wherein the heteroaryl is optionally substituted and derived from azepine, azetidine, benzimidazole, benzodioxolane, 2-benzofuran, benzothiazole, benzothiophene, 2-benzothiophene, 2-benzoxazole, βquinoxaline, quinazoline, quinoline, 2-quinoxaline, cyclohepta[b]-5carboline, pyrrole, diazepine, dihydropyridine, 3-hydroxypyrro-2,4-dione, 4-imidazole, imidazolidine, imidazoline, indazole, indole, isoquinoline, isoindole, isothiazole, isothiazolidine, isoxazole, 2-isoxazolidine, isoxazolidine, isoxazolone,

5

10

15

20

25

30

methylimidazole, 3-(N-methylpyrrolidine), morpholine, oxazole, 1,3,4-oxadiazole, oxadiazolidinedione, oxadiazolone, 5-oxo-4,5-dihydro-[1,3,4]oxadiazole, 5-oxo-1,2,4-thiadiazole, 1,2,3,5-oxathiadiazole-2-oxide, 1-oxo-1,2-dihydro-3-isoquinol, phenylpyrrole, 5-phenyl-2-pyrrole, phthalazine, piperazine, piperidine, pyrazine, pyrazole, pyrazoline, pyrazoline, pyrazoline, pyridazine, pyrimidine, pyridine, pyridyl-N-oxide, 2-pyrrole, 3-pyrrole, pyrrolidine, pyrroline, 4,5,6,7-tetrahydro-2indole, tetrahydrothienyl, tetrazole, thiadiazole, thiazole, thiomorpholine, thiophene, triazole, triazolone or triazole, wherein, the heteroaryl is optionally substituted one, two or three times by a radical derived from -C(O)-(C₁-C₄)-alkyl, -C(O), =O, -NH- (C_1-C_4) -alkyl, -NH- $((C_1-C_4)$ -alkyl)₂, - (C_1-C_8) -alkyl, - (C_1-C_8) -alkoxy, halogen, nitro, amino, trifluoromethyl, hydroxyl, -CF₃, hydroxy-(C₁-C₄)-alkyl, methylenedioxy, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl, $-(C_1-C_4)$ alkoxycarbonyl, phenyl, phenoxy, benzyl, benzyloxy, -S(O)_x-R¹¹, wherein x is zero, 1 or 2, -O-(C₁-C₄)-alkyl, -C(O)-OH, -C(O)-O-(C₁-C₄)-alkyl, -NH-C(O)-(C₁-C₄)-alkyl or tetrazolyl, halogen, -N- (C_1-C_6) -alkyl, wherein n is zero, 1 or 2 and the alkyl is optionbally substituted one, two, or three times, independently of each other, by halogen, or by -C(O)-OH, $-O-(C_1-C_6)$ -alkyl, or -C(O)-OH,

aryl, wherein the aryl is selected from anthryl, biphenylyl, 2-biphenylyl, 3-biphenylyl, 4-biphenylyl, fluorenyl, naphthyl, 1-naphthyl, 2-naphthyl and phenyl, and wherein the aryl is optionally substituted one, two or three times independently of one another by a radical selected from $-C(O)-(C_1-C_4)$ -alkyl, -C(O), =O, $-NH-(C_1-C_4)$ -alkyl, $-NH-((C_1-C_4)$ -alkyl)₂, $-(C_1-C_8)$ -alkyl, $-(C_1-C_8)$ -alkoxy, halogen, nitro, amino, trifluoromethyl, hydroxyl, $-CF_3$, and hydroxy- $-(C_1-C_4)$ -alkyl, methylenedioxy, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl, $-(C_1-C_4)$ -alkoxycarbonyl, phenyl, phenoxy, benzyl, benzyloxy, $-S(O)_x$ -R¹¹ wherein x is zero, 1 or 2, $-O-(C_1-C_4)$ -alkyl, -C(O)-OH, $-C(O)-O-(C_1-C_4)$ -alkyl, $-NH-C(O)-(C_1-C_4)$ -alkyl, or tetrazolyl, or

heteroaryl, having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, wherein the heteroaryl is optionally substituted and derived from azepine, azetidine, benzimidazole, benzodioxolane, 2-benzofuran, benzothiazole, benzothiophene, 2-benzothiophene, 2-benzothiophene, 2-benzothiophene, 2-benzothiophene, 2-benzothiophene, 2-benzothiophene, 2-duinoxaline, cyclohepta[b]-5-pyrrole, diazepine, dihydropyridine, 3-hydroxypyrro-2,4-dione, imidazole, 4-imidazole, imidazolidine, imidazoline, indazole, indole, isoquinoline, isoindole, isothiazole, isothiazolidine, isoxazole, 2-isoxazolidine, isoxazolidine, isoxazolone, methylimidazole, 3-(N-methylpyrrolidine), morpholine, oxazole, 1,3,4-oxadiazole, oxadiazolidinedione, oxadiazolone, 5-oxo-4,5-dihydro-[1,3,4]oxadiazole, 5-oxo-1,2,4-thiadiazole, 1,2,3,5-oxathiadiazole-2-oxide, 1-oxo-1,2-dihydro-3-isoquinol, phenylpyrrole, 5-phenyl-2-pyrrole, phthalazine, piperazine,

5

10

15

20

25

30

piperidine, pyrazine, pyrazole, pyrazoline, pyrazolidine, pyrazoline, pyridazine, pyrimidine, pyridine, pyridyl-N-oxide, 2-pyrrole, 3-pyrrole, pyrrolidine, pyrroline, 4.5.6.7-tetrahydro-2-indole, tetrahydrothienyl, tetrazole, thiadiazole, thiazole, thiomorpholine, thiophene, triazole, triazolone and triazole, wherein, the heteroaryl is optionally substituted one, two or three times by a radical derived from $-C(O)-(C_1-C_4)$ -alkyl, -C(O), =O, $-NH-(C_1-C_4)$ -alkyl, $-NH-((C_1-C_4)$ -alkyl)₂, $-(C_1-C_8)$ -alkyl, $-(C_1-C_8)$ -alkoxy, halogen, nitro, amino, trifluoromethyl, hydroxyl, $-CF_3$, hydroxy- $-(C_1-C_4)$ -alkyl, methylenedioxy, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl, $-(C_1-C_4)$ -alkoxycarbonyl, phenyl, phenoxy, benzyl, benzyloxy, $-S(O)_x$ - $-R^{11}$, wherein x is the integer zero, 1 or 2, $-O-(C_1-C_4)$ -alkyl, -C(O)-OH, -C(O)- $-(C_1-C_4)$ -alkyl, -NH-C(O)- $-(C_1-C_4)$ -alkyl, or tetrazolyl,

15

10

5

20

25

30

35

aryl, wherein, the aryl is selected from anthryl, biphenylyl, 2-biphenylyl, 3-biphenylyl, 4-biphenylyl, fluorenyl, naphthyl, 1-naphthyl, 2-naphthyl and phenyl, wherein the aryl is optionally substituted one, two or three times independently of one another by a radical selected from $-C(O)-(C_1-C_4)$ -alkyl, -C(O), =O, $-NH-(C_1-C_4)$ -alkyl, $-NH-((C_1-C_4)$ -alkyl), $-(C_1-C_8)$ -alkoxy, halogen, nitro, amino, trifluoromethyl, hydroxyl, $-CF_3$, hydroxy- $-(C_1-C_4)$ -alkyl, methylenedioxy, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl, $-(C_1-C_4)$ -alkoxycarbonyl, phenyl, phenoxy, benzyl, benzyloxy, $-S(O)_x-R^{11}$ wherein x is zero, 1 or 2, $-O-(C_1-C_4)$ -alkyl, -C(O)-OH, $-C(O)-O-(C_1-C_4)$ -alkyl, $-NH-C(O)-(C_1-C_4)$ -alkyl, and tetrazolyl,

heteroaryl, having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, wherein the heteroaryl is optionally substituted and derived from azepine, azetidine, benzimidazole, benzodioxolane, 2-benzofuran, benzothiazole, benzothiophene, 2-benzothiophene, 2-benzoxazole, β-carboline, quinoxaline, quinazoline, quinoline, 2-quinoxaline, cyclohepta[b]-5-pyrrole, diazepine, dihydropyridine, 3-hydroxypyrro-2,4-dione, imidazole, 4-imidazole, imidazolidine, imidazoline, indazole, indole, isoquinoline, isoindole, isothiazole, isothiazolidine, isoxazole, 2-isoxazolidine, isoxazolidine, isoxazolone, methylimidazole, 3-(N-methylpyrrolidine), morpholine, oxazole, 1,3,4-oxadiazole, oxadiazolidinedione, 5-oxo-4,5-dihydro-[1,3,4]oxadiazole, 5-oxo-1,2,4-thiadiazole, oxadiazolone, 1,2,3,5oxathiadiazole-2-oxide, 1-oxo-1,2-dihydro-3-isoquinol, phenylpyrrole, 5-phenyl-2-pyrrole, phthalazine, piperazine, piperidine, pyrazine, pyrazole, pyrazoline, pyrazolidine, pyrazoline, pyridazine, pyrimidine, pyridine, pyridyl-N-oxide, 2-pyrrole, 3-pyrrole, pyrrolidine, pyrroline, 4,5,6,7-tetrahydro-2-indole, tetrahydrothienyl, tetrazole, thiadiazole, thiazole, thiomorpholine, thiophene, triazole, triazolone or triazole, wherein, the heteroaryl is optionally substituted one, two or three times by a radical derived from $-C(O)-(C_1-C_4)$ -alkyl, -C(O), =O, $-NH-(C_1-C_4)$ alkyl, -NH- $((C_1-C_4)-alkyl)_2$, - $(C_1-C_8)-alkyl$, - $(C_1-C_8)-alkoxy$, halogen, nitro, amino,

trifluoromethyl, hydroxyl, -CF₃, hydroxy-(C_1 - C_4)-alkyl, methylenedioxy, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl, -(C_1 - C_4)-alkoxycarbonyl, phenyl, phenoxy, benzyl, benzyloxy, -S(O)_x-R¹¹, wherein x is zero, 1 or 2, -O-(C_1 - C_4)-alkyl, -C(O)-OH, -C(O)-O-(C_1 - C_4)-alkyl, -NH-C(O)-(C_1 - C_4)-alkyl or tetrazolyl,

5

10

15

20

25

30

-(C₁-C₆)-alkyl, wherein the alkyl is straight-chain or branched and is optionally substituted one, two, or three times, independently of each other by aryl, selected from anthryl, biphenylyl, 2-biphenylyl, 3-biphenylyl, 4-biphenylyl, fluorenyl, naphthyl, 1-naphthyl, 2-naphthyl and phenyl, wherein the aryl is optionally substituted one, two or three times independently of one another by a radical selected from -C(O)-(C₁-C₄)-alkyl, -C(O), =O, - $NH-(C_1-C_4)-alkyl$, $-NH-((C_1-C_4)-alkyl)_2$, $-(C_1-C_8)-alkyl$, $-(C_1-C_8)-alkoxy$, halogen, nitro, hydroxy-(C₁-C₄)-alkyl, methylenedioxy, $-CF_3$ trifluoromethyl, hydroxyl, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl, -(C1-C4)alkoxycarbonyl, phenyl, phenoxy, benzyl, benzyloxy, -S(O)_x-R¹¹ wherein x is zero, 1 or 2, - $O-(C_1-C_4)$ -alkyl, -C(O)-OH, $-C(O)-O-(C_1-C_4)$ -alkyl, $-NH-C(O)-(C_1-C_4)$ -alkyl, and tetrazolyl, heteroaryl, having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, wherein the heteroaryl is optionally substituted and derived from azepine, azetidine, benzimidazole, benzodioxolane, 2-benzofuran, benzothiazole, benzothiophene, 2-benzothiophene, 2-benzoxazole, β-carboline, quinoxaline, quinazoline, quinoline, 2-quinoxaline, cyclohepta[b]-5-pyrrole, diazepine, imidazole, 4-imidazole, imidazolidine, 3-hydroxypyrro-2,4-dione, dihydropyridine, imidazoline, indazole, indole, isoquinoline, isoindole, isothiazole, isothiazolidine, isoxazole, 2-isoxazolidine, isoxazolidine, isoxazolone, methylimidazole, 3-(N-methylpyrrolidine), morpholine, oxazole, 1,3,4-oxadiazole, oxadiazolidinedione, oxadiazolone, 5-oxo-4,5dihydro-[1,3,4]oxadiazole, 5-oxo-1,2,4-thiadiazole, 1,2,3,5-oxathiadiazole-2-oxide, 1-oxo-1,2-dihydro-3-isoquinol, phenylpyrrole, 5-phenyl-2-pyrrole, phthalazine, piperidine, pyrazine, pyrazole, pyrazoline, pyrazoline, pyrazoline, pyridazine, pyridazine, pyridazine, pyridine, pyridyl-N-oxide, 2-pyrrole, 3-pyrrole, pyrrolidine, pyrroline, 4,5,6,7-tetrahydro-2indole, tetrahydrothienyl, tetrazole, thiadiazole, thiazole, thiomorpholine, thiophene, triazole, triazolone or triazole, wherein, the heteroaryl is optionally substituted one, two or three times by a radical derived from $-C(O)-(C_1-C_4)$ -alkyl, -C(O), =O, $-NH-(C_1-C_4)$ -alkyl, $-NH-((C_1-C_4)-C_4)$ -alkyl, $-NH-((C_1-C_$ alkyl)2, -(C1-C8)-alkyl, -(C1-C8)-alkoxy, halogen, nitro, amino, trifluoromethyl, hydroxyl, -CF₃, hydroxy-(C₁-C₄)-alkyl, methylenedioxy, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl, -(C1-C4)-alkoxycarbonyl, phenyl, phenoxy, benzyl, benzyloxy, -S(O)_x-R¹¹, wherein x is zero, 1 or 2, -O-(C₁-C₄)-alkyl, -C(O)-OH, -C(O)-O-(C₁-C₄) C_4)-alkyl, -NH-C(O)-(C_1 - C_4)-alkyl or tetrazolyl, -(C_3 - C_6)-cycloalkyl, -O- \mathbb{R}^{11} , =O, halogen, -CN, -CF₃, -S(O), R^{11} , in which x is the integer zero, 1 or 2, -C(O)-O- R^{11} , -C(O)-N(R^{11})₂,

-C(O)-R¹¹, -N(R¹¹)₂, a radical of the formula

, or a radical of the formula

- R^{11}

5

10

15

20

25

30

35

wherein,

R¹¹ is hydrogen,

-(C₁-C₆)-alkyl wherein, the alkyl is unsubstituted or substituted one, two, or three times by aryl, wherein, the aryl is selected from anthryl, biphenylyl, 2biphenylyl, 3-biphenylyl, 4-biphenylyl, fluorenyl, naphthyl, 1-naphthyl, 2-naphthyl and phenyl, wherein the aryl is optionally substituted one, two or three times independently of one another by a radical selected from -C(O)-(C₁-C₄)-alkyl, -C(O), $= O, \quad -NH - (C_1 - C_4) - alkyl, \quad -NH - ((C_1 - C_4) - alkyl)_2, \quad -(C_1 - C_8) - alkyl, \quad -(C_1 - C_8) - alkoxy,$ halogen, nitro, amino, trifluoromethyl, hydroxyl, -CF₃, and hydroxy-(C₁-C₄)-alkyl, acetyl, hydroxycarbonyl, methylenedioxy, ethylenedioxy, formyl, cyano, aminocarbonyl, $-(C_1-C_4)$ -alkoxycarbonyl, phenyl, phenoxy, benzyl, benzyloxy, - $S(O)_x-R^{11}$ wherein x is zero, 1 or 2, $-O-(C_1-C_4)$ -alkyl, -C(O)-OH, $-C(O)-O-(C_1-C_4)$ alkyl, -NH-C(O)- (C_1-C_4) -alkyl, or tetrazolyl, heteroaryl, having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, wherein the heteroaryl is optionally substituted and derived from azepine, azetidine, benzimidazole, benzodioxolane, 2-benzofuran, benzothiazole, benzothiophene, 2-benzothiophene, 2-benzoxazole, β-carboline, quinoxaline, quinazoline, quinoline, 2-quinoxaline, cyclohepta[b]-5-pyrrole, diazepine, dihydropyridine, 3-hydroxypyrro-2,4-dione, imidazole, 4-imidazole, imidazolidine, imidazoline, indazole, indole, isoquinoline, isoindole, isothiazole, isothiazolidine, isoxazole, 2-isoxazolidine, isoxazolidine, isoxazolone, methylimidazole, 3-(N-methylpyrrolidine), morpholine, oxazole, 1,3,4-oxadiazole, oxadiazolidinedione, oxadiazolone, 5-oxo-4,5-dihydro-[1,3,4]oxadiazole, 5-oxo-1,2,3,5-oxathiadiazole-2-oxide, 1-oxo-1,2-dihydro-3-isoquinol, 1,2,4-thiadiazole, phenylpyrrole, 5-phenyl-2-pyrrole, phthalazine, piperazine, piperidine, pyrazine, pyrazole, pyrazoline, pyrazolidine, pyrazoline, pyridazine, pyrimidine, pyridine, pyridyl-N-oxide, 2-pyrrole, 3-pyrrole, pyrrolidine, pyrroline, 4,5,6,7-tetrahydro-2indole, tetrahydrothienyl, tetrazole, thiadiazole, thiazole, thiomorpholine, thiophene, triazole, triazolone or triazole, wherein, the heteroaryl is optionally substituted one, two or three times by a radical $-C(O)-(C_1-C_4)$ -alkyl, -C(O), =O, $-NH-(C_1-C_4)$ -alkyl, -NH- $((C_1-C_4)$ -alkyl)₂, $-(C_1-C_8)$ -alkyl, $-(C_1-C_8)$ -alkoxy, halogen, nitro, amino,

trifluoromethyl, hydroxyl, -CF₃, hydroxy-(C₁-C₄)-alkyl, methylenedioxy, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl, -(C₁-C₄)-alkoxycarbonyl, phenyl, phenoxy, benzyl, benzyloxy, -S(O)_x-R¹¹, wherein x is the integer zero, 1 or 2, -O-(C₁-C₄)-alkyl, -C(O)-OH, -C(O)-O-(C₁-C₄)-alkyl, -NH-C(O)-(C₁-C₄)-alkyl or tetrazolyl, **halogen**, -N-(C₁-C₆)_n-alkyl, in which n is zero, 1 or 2 and alkyl is optionally substituted one, two or three times, independently of each other, by halogen or -C(O)-OH, -O-(C₁-C₆)-alkyl, or -C(O)-OH, or

aryl, wherein, the aryl is selected from anthryl, biphenylyl, 2-biphenylyl, 3-biphenylyl, 4-biphenylyl, fluorenyl, naphthyl, 1-naphthyl, 2-naphthyl and phenyl, wherein the aryl is optionally substituted one, two or three times independently of one another by a radical selected from $-C(O)-(C_1-C_4)$ -alkyl, -C(O), =O, $-NH-(C_1-C_4)$ -alkyl, $-NH-((C_1-C_4)$ -alkyl)₂, $-(C_1-C_8)$ -alkyl, $-(C_1-C_8)$ -alkoxy, halogen, nitro, amino, trifluoromethyl, hydroxyl, $-CF_3$, and hydroxy- $-(C_1-C_4)$ -alkyl, methylenedioxy, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl, $-(C_1-C_4)$ -alkoxycarbonyl, phenyl, phenoxy, benzyl, benzyloxy, $-S(O)_x-R^{11}$ wherein x is zero, 1 or 2, $-O-(C_1-C_4)$ -alkyl, -C(O)-OH, $-C(O)-O-(C_1-C_4)$ -alkyl, $-NH-C(O)-(C_1-C_4)$ -alkyl and tetrazolyl, or

heteroaryl, having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, wherein the heteroaryl is optionally substituted and derived from azepine, azetidine, benzimidazole, benzodioxolane, 2-benzofuran, benzothiazole, benzothiophene, 2benzothiophene, 2-benzoxazole, β-carboline, quinoxaline, quinazoline, quinoline, 2quinoxaline, cyclohepta[b]-5-pyrrole, diazepine, dihydropyridine, 3-hydroxypyrro-2,4-dione, imidazole, 4-imidazole, imidazolidine, imidazoline, indazole, indole, isoquinoline, isoindole, isothiazole, isothiazolidine, isoxazole, 2-isoxazolidine, isoxazolidine, isoxazolone, methylimidazole, 3-(N-methylpyrrolidine),morpholine, oxazole, 1,3,4-oxadiazole, oxadiazolidinedione, oxadiazolone, 5-oxo-4,5-dihydro-[1,3,4]oxadiazole, 5-oxo-1,2,4-thiadiazole, 1,2,3,5-oxathiadiazole-2-oxide, 1-oxo-1,2dihydro-3-isoquinol, phenylpyrrole, 5-phenyl-2-pyrrole, phthalazine, piperazine, piperidine, pyrazine, pyrazole, pyrazoline, pyrazoline, pyrazoline, pyrazoline, pyrimidine, pyridine, pyridyl-N-oxide, 2-pyrrole, 3-pyrrole, pyrrolidine, pyrroline, 4,5,6,7-tetrahydro-2-indole, tetrahydrothienyl, tetrazole, thiadiazole, thiazole, thiomorpholine, thiophene, triazole, triazolone or triazole, wherein, the heteroaryl is optionally substituted one, two or three times by a radical derived from -C(O)-(C₁- C_4)-alkyl, -C(O), =O, -NH- (C_1-C_4) -alkyl, -NH- $((C_1-C_4)$ -alkyl)₂, $-(C_1-C_8)$ -alkyl, $-(C_1-$ C₈)-alkoxy, halogen, nitro, amino, trifluoromethyl, hydroxyl, -CF₃, hydroxy-(C₁-C₄)alkyl, methylenedioxy, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl, -(C₁-C₄)-alkoxycarbonyl, phenyl, phenoxy, benzyl, benzyloxy,

5

10

15

20

25

30

 $-S(O)_x-R^{11}$, wherein x is zero, 1 or 2, $-O-(C_1-C_4)$ -alkyl, -C(O)-OH, $-C(O)-O-(C_1-C_4)$ -alkyl, $-NH-C(O)-(C_1-C_4)$ -alkyl or tetrazolyl,

wherein, the case of (R11)2, each R11, independently of each other, is hydrogen,

-(C₁-C₆)-alkyl wherein, the alkyl is optionally substituted one, two, or three times by aryl, wherein, the aryl is selected from anthryl, biphenylyl, 2biphenylyl, 3-biphenylyl, 4-biphenylyl, fluorenyl, naphthyl, 1-naphthyl, 2-naphthyl or phenyl, wherein the aryl is optionally substituted one, two or three times independently of one another by a radical selected from $-C(O)-(C_1-C_4)$ -alkyl, -C(O), $= O_1 - NH - (C_1 - C_4) = NH - ((C_1 - C_4) - alkyl)_2, -(C_1 - C_8) - alkyl, -(C_1 - C_8) - alkoxy,$ halogen, nitro, amino, trifluoromethyl, hydroxyl, -CF₃, and hydroxy-(C₁-C₄)-alkyl, methylenedioxy, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl, $-(C_1-C_4)$ -alkoxycarbonyl, phenyl, phenoxy, benzyl, benzyloxy, $-S(O)_x-R^{11}$ wherein x is zero, 1 or 2, $-O-(C_1-C_4)$ -alkyl, -C(O)-OH, $-C(O)-O-(C_1-C_4)$ alkyl, -NH-C(O)- (C_1-C_4) -alkyl, or tetrazolyl, heteroaryl, having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, wherein the heteroaryl is optionally substituted and derived from azepine, azetidine, benzimidazole, benzodioxolane, 2-benzofuran, benzothiazole, benzothiophene, 2-benzothiophene, 2-benzoxazole, \u03b3-carboline, quinoxaline, quinazoline, quinoline, 2-quinoxaline, cyclohepta[b]-5-pyrrole, diazepine, dihydropyridine, 3-hydroxypyrro-2,4-dione, imidazole, 4-imidazole, imidazolidine, imidazoline, indazole, indole, isoquinoline, isoindole, isothiazole, isothiazolidine, isoxazole, 2-isoxazolidine, isoxazolidine, isoxazolone, methylimidazole, 3-(N-methylpyrrolidine), morpholine, oxazole, 1,3,4-oxadiazole, oxadiazolidinedione, oxadiazolone, 5-oxo-4,5-dihydro-[1,3,4]oxadiazole, 5-oxo-1,2,4-thiadiazole, 1,2,3,5-oxathiadiazole-2-oxide, 1-oxo-1,2-dihydro-3-isoquinol, phenylpyrrole, 5-phenyl-2-pyrrole, phthalazine, piperazine, piperidine, pyrazine, pyrazole, pyrazoline, pyrazolidine, pyrazoline, pyridazine, pyrimidine, pyridine, pyridyl-N-oxide, 2-pyrrole, 3-pyrrole, pyrrolidine, pyrroline, 4,5,6,7-tetrahydro-2indole, tetrahydrothienyl, tetrazole, thiadiazole, thiazole, thiomorpholine, thiophene, triazole, triazolone and triazole, wherein, the heteroaryl is optionally substituted one, two or three times by a radical derived from -C(O)-(C₁-C₄)-alkyl, -C(O), =O, -NH- (C_1-C_4) -alkyl, -NH- $((C_1-C_4)$ -alkyl)₂, - (C_1-C_8) -alkyl, - (C_1-C_8) -alkoxy, halogen, nitro, amino, trifluoromethyl, hydroxyl, -CF₃, hydroxy-(C₁-C₄)-alkyl, methylenedioxy, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl, -(C₁-C₄)alkoxycarbonyl, phenyl, phenoxy, benzyl, benzyloxy, -S(O)_x-R¹¹, wherein x is the integer zero, 1 or 2, -O-(C₁-C₄)-alkyl, -C(O)-OH, -C(O)-O-(C₁-C₄)-alkyl, -NH-C(O)-(C₁-C₄)-alkyl or tetrazolyl, halogen, -N-(C₁-C₆)_n-alkyl, in which n is zero, 1 or 2 and alkyl is optionally substituted one, two or three times, independently of each other,

5

10

15

20

25

30

by halogen or -C(O)-OH, or -O-(C₁-C₆)-alkyl, or -C(O)-OH, or

aryl, wherein, the aryl is selected from anthryl, biphenylyl, 2-biphenylyl, 3-biphenylyl, 4-biphenylyl, fluorenyl, naphthyl, 1-naphthyl, 2-naphthyl or phenyl, wherein the aryl is optionally substituted one, two or three times independently of one another by a radical selected from $-C(O)-(C_1-C_4)$ -alkyl, -C(O), =O, $-NH-(C_1-C_4)$ -alkyl, $-NH-((C_1-C_4)$ -alkyl)₂, $-(C_1-C_8)$ -alkyl, $-(C_1-C_8)$ -alkoxy, halogen, nitro, amino, trifluoromethyl, hydroxyl, $-CF_3$, and hydroxy- $-(C_1-C_4)$ -alkyl, methylenedioxy, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl, $-(C_1-C_4)$ -alkoxycarbonyl, phenyl, phenoxy, benzyl, benzyloxy, $-S(O)_x-R^{11}$ wherein x is zero, 1 or 2, $-O-(C_1-C_4)$ -alkyl, -C(O)-OH, $-C(O)-O-(C_1-C_4)$ -alkyl, $-NH-C(O)-(C_1-C_4)$ -alkyl, or tetrazolyl, and

heteroaryl, having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, wherein the heteroaryl is optionally substituted and derived from azepine, azetidine, benzimidazole, benzodioxolane, 2-benzofuran, benzothiazole, benzothiophene, 2benzothiophene, 2-benzoxazole, β-carboline, quinoxaline, quinazoline, quinoline, 2-quinoxaline, cyclohepta[b]-5-pyrrole, diazepine, dihydropyridine, 3-hydroxypyrro-2,4-dione, imidazole, 4-imidazole, imidazolidine, imidazoline, indazole, indole, isoquinoline, isoindole, isothiazole, isothiazolidine, isoxazole, 2-isoxazolidine, isoxazolidine, isoxazolone, methylimidazole, 3-(N-methylpyrrolidine), morpholine, oxazole, 1,3,4-oxadiazole, oxadiazolidinedione, oxadiazolone, 5-oxo-4,5-dihydro-[1,3,4]oxadiazole, 5-oxo-1,2,4-thiadiazole, 1,2,3,5-oxathiadiazole-2-oxide, 1-oxo-1,2dihydro-3-isoquinol, phenylpyrrole, 5-phenyl-2-pyrrole, phthalazine, piperazine, piperidine, pyrazole, pyrazoline, pyrazoline, pyrazoline, pyrazoline, pyrazoline, pyrimidine, pyridine, pyridyl-N-oxide, 2-pyrrole, 3-pyrrole, pyrrolidine, pyrroline, 4,5,6,7-tetrahydro-2-indole, tetrahydrothienyl, tetrazole, thiadiazole, thiazole, thiomorpholine, thiophene, triazole, triazolone and triazole, wherein, the heteroaryl is optionally substituted one, two or three times by a radical derived from -C(O)-(C1- C_4)-alkyl, -C(O), =O, $-NH-(C_1-C_4)$ -alkyl, $-NH-((C_1-C_4)$ -alkyl)₂, $-(C_1-C_8)$ -alkyl, $-(C_1-C_8)$ -alkyl C₈)-alkoxy, halogen, nitro, amino, trifluoromethyl, hydroxyl, -CF₃, hydroxy-(C₁-C₄)alkyl, methylenedioxy, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl, -(C₁-C₄)-alkoxycarbonyl, phenyl, phenoxy, benzyl, benzyloxy, $-S(O)_x-R^{11}$, wherein x is zero, 1 or 2, $-O-(C_1-C_4)$ -alkyl, -C(O)-OH, $-C(O)-O-(C_1-C_4)$ alkyl, -NH-C(O)-(C_1 - C_4)-alkyl or tetrazolyl;

at least one of one of R1, R2, R3 and R4 is a radical of the formula II, wherein,

D is -C(O)-, -S(O)- or $-S(O)_2$ -;

5

10

15

20

25

30

\mathbb{R}^8 is hydrogen atom or (C_1-C_4) -alkyl;

5

10

15

20

25

30

Z is aryl, selected from anthryl, biphenylyl, 2-biphenylyl, 3-biphenylyl, 4-biphenylyl,

fluorenyl, naphthyl, 1-naphthyl, 2-naphthyl or phenyl, wherein the aryl is optionally substituted one, two or three times independently of one another by a radical selected from $-C(O)-(C_1-C_4)$ -alkyl, -C(O), =O, $-NH-(C_1-C_4)$ -alkyl, $-NH-((C_1-C_4)$ -alkyl)₂, $-(C_1-C_8)$ -alkyl, $-(C_1-C_8)$ -alkoxy, halogen, nitro, amino, trifluoromethyl, hydroxyl, $-CF_3$, and hydroxy- $-(C_1-C_4)$ -alkyl, methylenedioxy, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl, $-(C_1-C_4)$ -alkoxycarbonyl, phenyl, phenoxy, benzyl, benzyloxy, $-S(O)_x-R^{11}$ wherein x is zero, 1 or 2, $-O-(C_1-C_4)$ -alkyl, -C(O)-OH, $-C(O)-O-(C_1-C_4)$ -alkyl, $-NH-C(O)-(C_1-C_4)$ -alkyl, or tetrazolyl, or

heteroaryl, having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, wherein the heteroaryl is optionally substituted and derived from azepine, azetidine, benzimidazole, benzodioxolane, 2-benzofuran, benzothiazole, benzothiophene, 2-benzothiophene, 2-benzoxazole, β -carboline, cyclohepta[b]-5-pyrrole, auinoline, 2-quinoxaline, quinoxaline, quinazoline, dihydropyridine, 3-hydroxypyrro-2,4-dione, imidazole, 4-imidazole, imidazolidine, imidazoline, indazole, indole, isoquinoline, isoindole, isothiazole, isothiazolidine, isoxazole, 2-isoxazolidine, isoxazolidine, isoxazolone, methylimidazole, 3-(N-methylpyrrolidine), morpholine, oxazole, 1,3,4oxadiazole, oxadiazolidinedione, oxadiazolone, 5-oxo-4,5-dihydro-[1,3,4]oxadiazole, 5-oxo-1,2,4thiadiazole, 1,2,3,5-oxathiadiazole-2-oxide, 1-oxo-1,2-dihydro-3-isoquinol, phenylpyrrole, 5-phenyl-2-pyrrole, phthalazine, piperazine, piperidine, pyrazine, pyrazole, pyrazoline, pyrazolidine, pyrazoline, pyridazine, pyrimidine, pyridine, pyridyl-N-oxide, 2-pyrrole, 3-pyrrole, pyrrolidine, thiazole. 4,5,6,7-tetrahydro-2-indole, tetrazole, thiadiazole, tetrahydrothienyl, pyrroline, thiomorpholine, thiophene, triazole, triazolone and triazole, wherein, the heteroaryl is optionally substituted one, two or three times by a radical derived from -C(O)-(C1-C4)-alkyl, -C(O), =O, -NH- (C_1-C_4) -alkyl, -NH- $((C_1-C_4)$ -alkyl)₂, - (C_1-C_8) -alkyl, - (C_1-C_8) -alkoxy, halogen, nitro, amino, trifluoromethyl, hydroxyl, -CF3, hydroxy-(C1-C4)-alkyl, methylenedioxy, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl, -(C1-C4)-alkoxycarbonyl, phenyl, phenoxy, benzyl, benzyloxy, -S(O)_x-R¹¹, wherein x is the integer zero, 1 or 2, -O-(C₁-C₄)-alkyl, -C(O)-OH, $-C(O)-O-(C_1-C_4)$ -alkyl, -NH-C(O)-(C₁-C₄)-alkyl or tetrazolyl, or

-(C₁-C₆)-alkyl, wherein the alkyl is straight-chain or branched and is substituted one or two times by phenyl or -OH,

-C(O)-O-R¹¹, or -C(O)-N(R¹¹)₂, and wherein,

35 the remaining R¹, R², R³ and R⁴ in each case are, independently of each other selected from

hydrogen, halogen, -(C₁-C₄)-alkyl,

heteroaryl, having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, wherein the heteroaryl is optionally substituted and derived from azepine, azetidine, benzimidazole, benzodioxolane, 2-benzofuran, benzothiazole, benzothiophene, 2-benzothiophene, 2-benzoxazole, β-carboline, quinazoline, quinoline, 2-quinoxaline, cyclohepta[b]-5-pyrrole, diazepine, quinoxaline, dihydropyridine, 3-hydroxypyrro-2,4-dione, imidazole, 4-imidazole, imidazolidine, imidazoline, indazole, indole, isoquinoline, isoindole, isothiazole, isothiazolidine, isoxazole, 2-isoxazolidine, isoxazolidine, isoxazolone, methylimidazole, 3-(N-methylpyrrolidine), morpholine, oxazole, 1,3,4oxadiazole, oxadiazolidinedione, oxadiazolone, 5-oxo-4,5-dihydro-[1,3,4]oxadiazole, 5-oxo-1,2,4thiadiazole, 1,2,3,5-oxathiadiazole-2-oxide, 1-oxo-1,2-dihydro-3-isoquinol, phenylpyrrole, 5-phenyl-2-pyrrole, phthalazine, piperazine, piperidine, pyrazine, pyrazole, pyrazoline, pyrazolidine, pyrazoline, pyridazine, pyrimidine, pyridine, pyridyl-N-oxide, 2-pyrrole, 3-pyrrole, pyrrolidine, thiadiazole, 4,5,6,7-tetrahydro-2-indole, tetrahydrothienyl, tetrazole, thiomorpholine, thiophene, triazole, triazolone and triazole, wherein, the heteroaryl is optionally substituted one, two or three times by a radical derived from -C(O)-(C1-C4)-alkyl, -C(O), =O, -NH- $(C_1-C_4)-alkyl, \quad -NH-((C_1-C_4)-alkyl)_2, \quad -(C_1-C_8)-alkyl, \quad -(C_1-C_8)-alkoxy, \quad halogen, \quad nitro, \quad amino, \quad -(C_1-C_8)-alkyl, \quad -(C_1-C_$ trifluoromethyl, hydroxyl, -CF3, hydroxy-(C1-C4)-alkyl, methylenedioxy, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl, -(C1-C4)-alkoxycarbonyl, phenyl, phenoxy, benzyl, benzyloxy, -S(O)_x-R¹¹, wherein x is the integer zero, 1 or 2, -O-(C₁-C₄)-alkyl, -C(O)-OH, -C(O)-O-(C_1 - C_4)-alkyl, -NH-C(O)-(C_1 - C_4)-alkyl or tetrazolyl, or

```
20 -(C<sub>1</sub>-C<sub>6</sub>)-alkyl,
-NO<sub>2</sub>,
-CN,
-O-(C<sub>0</sub>-C<sub>4</sub>)-alkylaryl,
-O-(C<sub>1</sub>-C<sub>4</sub>)-alkyl,

25 -OR<sup>11</sup>,
-N(R<sup>11</sup>)<sub>2</sub>,
-S(O)<sub>x</sub>-R<sup>11</sup>, wherein x is zero, 1 or 2, and
-CF<sub>3</sub>;
```

30 R^5 is hydrogen, -OH or =O; and

5

10

15

R⁶ is aryl, selected from naphthyl, 1-naphthyl, 2-naphthyl, phenyl, biphenylyl, 2-biphenylyl, 3-biphenylyl, 4-biphenylyl, anthryl and fluorenyl, wherein, the aryl is optionally substituted, one, two or three times, by the radical chosen from -C(O)-(C₁-C₄)-alkyl, -C(O), =O, -NH-(C₁-C₄)-alkyl, -NH-(C₁-C₄)-alkyl), -(C₁-C₈)-alkyl, -(C₁-C₈)-alkoxy, halogen, nitro, amino, trifluoromethyl, hydroxyl, -CF₃, hydroxy-(C₁-C₄)-alkyl, methylenedioxy, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl, -(C₁-C₄)-alkoxycarbonyl, phenyl, phenoxy, benzyl, benzyloxy, -S(O)_x-R¹¹, in which x is zero, 1 or 2, -O-(C₁-C₄)-alkyl, -C(O)-OH, -C(O)-O-(C₁-C₄)-alkyl, -NH-C(O)-(C₁-C₄)-alkyl and

tetrazolyl, or

5

10

15

20

25

35

heteroaryl, having 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 ring members, wherein the heteroaryl is optionally substituted and derived from azepine, azetidine, benzimidazole, benzodioxolane, 2-benzofuran, benzothiazole, benzothiophene, 2-benzothiophene, 2-benzoxazole, β-carboline, cyclohepta[b]-5-pyrrole, diazepine, 2-quinoxaline, quinoline, quinoxaline, quinazoline, dihydropyridine, 3-hydroxypyrro-2,4-dione, imidazole, 4-imidazole, imidazolidine, imidazoline, indazole, indole, isoquinoline, isoindole, isothiazole, isothiazolidine, isoxazole, 2-isoxazolidine, isoxazolidine, isoxazolone, methylimidazole, 3-(N-methylpyrrolidine), morpholine, oxazole, 1,3,4oxadiazole, oxadiazolidinedione, oxadiazolone, 5-oxo-4,5-dihydro-[1,3,4]oxadiazole, 5-oxo-1,2,4thiadiazole, 1,2,3,5-oxathiadiazole-2-oxide, 1-oxo-1,2-dihydro-3-isoquinol, phenylpyrrole, 5-phenyl-2-pyrrole, phthalazine, piperazine, piperidine, pyrazine, pyrazole, pyrazoline, pyrazolidine, pyrazoline, pyridazine, pyrimidine, pyridine, pyridyl-N-oxide, 2-pyrrole, 3-pyrrole, pyrrolidine, tetrahydrothienyl, tetrazole, thiadiazole, thiazole, 4,5,6,7-tetrahydro-2-indole, pyrroline, thiomorpholine, thiophene, triazole, triazole, or triazole, wherein, the heteroaryl is optionally substituted one, two or three times by a radical derived from -C(O)-(C1-C4)-alkyl, -C(O), =O, -NH- (C_1-C_4) -alkyl, -NH- $((C_1-C_4)$ -alkyl)₂, - (C_1-C_8) -alkyl, - (C_1-C_8) -alkoxy, halogen, nitro, amino, $trifluoromethyl,\ hydroxyl,\ -CF_3,\ hydroxy-(C_1-C_4)-alkyl,\ methylenedioxy,\ ethylenedioxy,\ formyl,$ acetyl, cyano, hydroxycarbonyl, aminocarbonyl, -(C1-C4)-alkoxycarbonyl, phenyl, phenoxy, benzyl, benzyloxy, -S(O)_x-R¹¹, wherein x zero, 1 or 2, -O-(C₁-C₄)-alkyl, -C(O)-OH, -C(O)-O-(C₁-C₄)-alkyl, -NH-C(O)- (C_1-C_4) -alkyl or tetrazolyl.

4. The method according to claim 2, wherein, for formula I,

E is N or the radical $-C(R^{19})$ -, wherein R^{19} is hydrogen;

at least one of one of R1, R2, R3 and R4 is a radical of the formula II, wherein,

R8 is hydrogen;

R⁹ is a characteristic radical of an amino acid wherein, the amino acid is selected from histidine, serine, tryptophan, threonine, cysteine, methionine, asparagine, glutamine, lysine, arginine, glutamic acid and aspartic acid, or

-(C₁-C₆)-alkyl, wherein alkyl is straight-chain or branched and is optionally substituted, one or two times, by **phenyl**, **a radical** selected from azepine, azetidine, benzimidazole, benzothiazole, benzothiophene, benzoxazole, diazepine, imidazole, indole, isothiazole, isoxazole, morpholine, 1,3,4-oxadiazole, 5-oxo-4,5-dihydro-[1,3,4]oxadiazole, oxazole piperidine, pyrazine, pyrazole, pyridine, pyrimidine, pyrrole, pyrrolidine, pyrroline, thiazole, thiomorpholine, thiophene and triazole, -NH(R¹¹), -C(O)-R¹², wherein R¹² is naphthyl, phenyl, morpholinyl or pyrimidinyl, -O-R¹¹, -N(R¹²)-

phenyl, wherein R^{12} is naphthyl, phenyl, morpholinyl or pyrimidinyl, $-S(O)_x-R^{12}$, in which x is zero, 1 or 2, -CN, or $-(C_3-C_6)$ -cycloalkyl,

wherein,

5

10

15

20

25

30

the phenyl radical, the radical selected from azepine, azetidine, benzimidazole, benzothiazole, benzothiophene, benzoxazole, diazepine, imidazole, indole, isothiazole, isoxazole, morpholine, 1,3,4-oxadiazole, 5-oxo-4,5-dihydro-[1,3,4]oxadiazole, oxazole piperidine, pyrazine, pyrazole, pyridine, pyrimidine, pyrrole, pyrrolidine, pyrroline, thiazole, thiomorpholine, thiophene and triazole, the - $C(O)-R^{12}$, wherein R^{12} is naphthyl, phenyl, morpholinyl or pyrimidinyl, the - (C_3-C_6) -cycloalkyl and the R^{12} are optionally substituted, one or two times, by -OH, - (C_1-C_4) -alkyl, -CF₃, halogen, -O- (C_1-C_4) -alkyl, -COOH, -C(O)-O- (C_1-C_4) -alkyl, -NH₂ or -NH-C(O)- (C_1-C_4) -alkyl,

and wherein,

 R^{11} is -(C₁-C₄)-alkyl, R^{13} or, -N(R^{13})₂, wherein the R^{13} , independently of each other, are selected from hydrogen, -(C₁-C₆)-alkyl, -(C₁-C₄)-alkyl-O-(C₁-C₄)-alkyl, -(C₁-C₆)-alkyl-N(R^{15})₂, wherein R^{15} is R^{15} is hydrogen atom or -(C₁-C₄)-alkyl, -(C₀-C₄)-alkyl, wherein the alkyl is substituted one or two time, by imidaolyl, morpholinyl or phenyl;

Z is a heteroaryl radical selected from 3-hydroxypyrro-2,4-dione, imidazole, imidazolidine, imidazoline, indazole, isothiazole, isothiazolidine, isoxazole, isoxazolidine, 2-isoxazolidine, 1,3,4-oxadiazole, oxadiazolidinedione, oxadiazolone, 1,2,3,5isoxazolone, morpholine, oxathiadiazole-2-oxide, oxazole, 5-oxo-4,5-dihydro-[1,3,4]oxadiazole, 5-oxo-1,2,4-thiadiazole, piperazine, pyrazole, pyrazole, pyrazolidine, pyrazoline, pyridazine, pyrimidine, tetrazole, thiadiazole, thiazole, thiomorpholine, triazole and triazolone, wherein the heteroaryl radical is optionally substituted, one, two or three times, independently of each other, by -C(O)-R¹⁵, wherein R¹⁵ is hydrogen or $-(C_1-C_4)$ -alkyl, $-(C_1-C_4)$ -alkyl, $-O-R^{15}$, wherein, R^{15} is hydrogen or $-(C_1-C_4)$ -alkyl, -N(R¹⁵)-R¹⁶, whrein, R¹⁵ and R¹⁶ are, independent of each other, hydrogen or -(C₁-C₄)-alkyl, halogen, or a keto radical.

- -C(O)- R^{15} , wherein R^{15} is hydrogen atom or -(C₁-C₄)-alkyl,
- -C(O)- R^{15} , wherein R^{15} is hydrogen atom or -(C₁-C₄)-alkyl, or
- -C(O)-N(R¹⁵)R¹⁶, wherein R¹⁵ and R¹⁶ are, independent of each other, hydrogen or
- $-(C_1-C_4)$ -alkyl;

i) R⁸ and R⁹ form, together with the nitrogen atom and carbon atom to which they

are in each case bonded, a ring of the formula IIa from the group pyrrole, pyrroline, pyrrolidine, pyridine, piperidine, piperylene, pyridazine, pyrimidine, pyrazine, piperazine, pyrazole, imidazole, pyrazoline, imidazoline, imidazolidine, oxazole, isoxazole, 2-isoxazolidine, isoxazolidine, morpholine, isothiazole, thiazole, tetrazole, 1,2,3,5-oxathiadiazole-2-oxides,

oxadiazolone, isoxazolone, triazolones, oxadiazolidinedione, triazole, which are substituted by F, CN, CF₃ or COO-(C₁-C₄)-alkyl, 3-hydroxypyrro-2,4-diones, 5-oxo-1,2,4-thiadiazoles, 1,3,4-oxadiazole, isothiazolidine, thiomorpholine, indazole, thiadiazole, benzimidazole, quinoline, triazole, phthalazine, quinazoline, quinoxaline, purine, pteridine, indole, tetrahydroquinoline, tetrahydroisoquinoline and isoquinoline; or

ii) R⁹ and Z form, together with the carbon atoms to which they are in each case

bonded, a ring of the formula IIc from the group pyrrole, pyrroline, pyrrolidine, pyridine, piperidine, piperylene, pyridazine, pyrimidine, pyrazine, piperazine, pyrazole, imidazole, pyrazoline, imidazoline, pyrazolidine, imidazoline, isoxazole, 2-isoxazolidine, isoxazolidine, morpholine, isothiazole, thiazole, isothiazole, thiomorpholine, indazole, thiadiazole, benzimidazole, quinoline, triazole, phthalazine, quinazoline, quinoxaline, purine, pteridine, indole, tetrahydroquinoline, tetrahydroisoquinoline, isoquinoline, tetrazole, 1,2,3,5-oxathiadiazole-2-oxides, oxadiazolone, isoxazolone, triazolones, oxadiazolidinedione, triazole, which are substituted by F, CN, CF₃ or COO- (C_1-C_4) -alkyl, 3-hydroxypyrro-2,4-diones, 1,3,4-oxadiazole or 5-oxo-1,2,4-thiadiazole; and

wherein,

5

10

15

25

30

35

the remaining R¹, R², R³ and R⁴ in each case are, independently of each other selected from

20 hydrogen,

halogen,

 $-(C_1-C_4)$ -alkyl,

-CN,

-NO₂,

-O-(C₀-C₄)-alkyl-phenyl,

 $-O-(C_1-C_4)$ -alkyl,

-N-(C₀-C₄)-alkyl-phenyl,

-N-(C₁-C₄)-alkyl and

 $-CF_3$;

R⁵ is hydrogen, -OH, or =O; and

R⁶ is phenyl, substituted one or two times by -CN, -NO₂, -O-(C₁-C₄)-alkyl, or-NH₂, or

pyridine or pyrimidine, wherein pyridine or pyrimidine is optionally substituted, one, two or three times by a radical selected from $-C(O)-(C_1-C_4)$ -alkyl, -C(O), =O, $-NH-(C_1-C_4)$ -alkyl, $-NH-((C_1-C_4)$ -alkyl)₂, $-(C_1-C_8)$ -alkyl, $-(C_1-C_8)$ -alkoxy, halogen, nitro, amino, trifluoromethyl, hydroxyl, $-CF_3$, hydroxy- $-(C_1-C_4)$ -alkyl, methylenedioxy, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl, $-(C_1-C_4)$ -alkoxycarbonyl, phenoxy, benzyl, benzyloxy, $-S(O)_x-R^{11}$, wherein x

is zero, 1 or 2, $-O-(C_1-C_4)$ -alkyl, -C(O)-OH, $-C(O)-O-(C_1-C_4)$ -alkyl, $-NH-C(O)-(C_1-C_4)$ -alkyl and tetrazolyl.

5. The method according to claim 2, wherein, for formula I,

5

10

15

E is a radical -C(R¹⁹)-, wherein, R¹⁹ is hydrogen or R⁹, wherein,

 R^9 is -(C₁-C₄)-alkyl, wherein the alkyl is straight-chain or branched and is substituted one or two times, independently of each other, by -S(O)-R¹¹, wherein, R¹¹ is hydrogen, -(C₁-C₆)-alkyl, wherein alkyl is optionally substituted, one, two or three times, independently of each other by halogen, or phenyl, wherein, the phenyl is optionally substituted, one, two, or three times, independently of each other, by halogen or -(C₁-C₄)-alkyl, -N(R¹¹)₂, wherein, R¹¹ is hydrogen, -(C₁-C₆)-alkyl, wherein alkyl is optionally substituted, one, two or three times, independently of each other by halogen, or phenyl, wherein phenyl isoptionally substituted, one, two, or three times, independently of each other, by halogen or -(C₁-C₄)-alkyl, or **pyrrole**, or

a characteristic radical of an amino acid selected from the histidine, tryptophan, serine, threonine, cysteine, methionine, asparagine, glutamine, lysine, arginine, glutamic acid and aspartic acid;

at least one of one of R¹, R², R³ and R⁴ is a radical of the formula II, wherein, for formula II,

D is -C(O)-;

R8 is hydrogen;

25

Z is 5-oxo-4,5-dihydro-[1,3,4]oxadiazole, -C(O)-OH or -C(O)-NH₂;

R11 is hydrogen,

-(C₁-C₆)-alkyl, wherein the alkyl is optionally substituted, one, two or three times, independently of each other by halogen, or

phenyl, wherein phenyl is optionally substituted, one, two, or three times, independently of each other, by halogen or -(C_1 - C_4)-alkyl;

the remaining R¹, R², R³ and R⁴ are in each case hydrogen;

35

30

R⁵ is hydrogen atom, and

R⁶ is phenyl, pyridine or pyrimidine, wherein the phenyl, pyridine or pyrimidine is

optionally substituted, one, two or three times, by a radical selected from $-C(O)-(C_1-C_4)$ -alkyl, -C(O), =O, $-NH-(C_1-C_4)$ -alkyl, $-NH-((C_1-C_4)$ -alkyl)₂, $-(C_1-C_8)$ -alkyl, $-(C_1-C_8)$ -alkyl, amino, trifluoromethyl, hydroxyl, $-CF_3$, hydroxy- $-(C_1-C_4)$ -alkyl, methylenedioxy, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl, $-(C_1-C_4)$ -alkoxycarbonyl, phenoxy, benzyl, benzyloxy, $-S(O)_x-R^{11}$, wherein x is zero, 1 or 2, $-O-(C_1-C_4)$ -alkyl, -C(O)-OH, $-C(O)-O-(C_1-C_4)$ -alkyl, $-NH-C(O)-(C_1-C_4)$ -alkyl and tetrazolyl.

6. The method according to claim 2, wherein, for formula Ia,

or a stereoisomeric form thereof or a mixture of stereoisomeric forms in any ratio, or a physiologically tolerated salt thereof, wherein,

15

5

10

E is N or CH;

M is N or CH;

20 R21 is hydrogen,

halogen,

 $-(C_1-C_4)$ -alkyl,

-CN,

-CF₃,

-OR¹⁵, wherein, R^{15} is hydrogen or -(C_1 - C_4)-alkyl,

-N(R^{15})- R^{16} wherein, R^{15} and R^{16} are, independently of each other, hydrogen or –(C_1 - C_4)-alkyl,

-C(O)-R¹⁵, wherein, R¹⁵ is hydrogen or -(C₁-C₄)-alkyl, or

 $-S(O)_x-R^{15}$, wherein, x is zero, 1 or 2, and R^{15} is hydrogen or $-(C_1-C_4)$ -alkyl;

30

```
R31 is hydrogen,
```

15

20

25

30

35

```
halogen,

-(C<sub>1</sub>-C<sub>4</sub>)-alkyl,

-CN,

5 -CF<sub>3</sub>,

-OR<sup>15</sup>, wherein, R<sup>15</sup> is hydrogen atom or -(C<sub>1</sub>-C<sub>4</sub>)-alkyl,

-N(R<sup>15</sup>)-R<sup>16</sup>wherein, R<sup>15</sup> and R<sup>16</sup> are, independently of each other, hydrogen or

-(C<sub>1</sub>-C<sub>4</sub>)-alkyl,

-C(O)-R<sup>15</sup>, wherein, R<sup>15</sup> is hydrogen or -(C<sub>1</sub>-C<sub>4</sub>)-alkyl, or

-S(O)<sub>x</sub>-R<sup>15</sup>, wherein, x is zero, 1 or 2, and R<sup>15</sup> is hydrogen or -(C<sub>1</sub>-C<sub>4</sub>)-alkyl;
```

R22 is a heteroaryl radical selected from 3-hydroxypyrro-2,4-dione, imidazole, imidazolidine, imidazole, isothiazole, isothiazole, isothiazole, isoxazole, 2-isoxazolidine, isoxazolidine, isoxazolone, morpholine, oxazole, 1,3,4-oxadiazole, oxadiazolidinedione, oxadiazolone, 1,2,3,5-oxathiadiazole-2-oxide, 5-oxo-4,5-dihydro-[1,3,4]oxadiazole, 5-oxo-1,2,4-thiadiazole, piperazine, pyrazine, pyrazole, pyrazoline, pyrazolidine, pyridazine, pyrimidine, tetrazole, thiadiazole, thiazole, thiomorpholine, triazole and triazolone, wherein the heteroaryl radical is optionally substituted one, two or three times by -C(O)-R¹⁵, wherein R¹⁵ is hydrogen or -(C₁-C₄)-alkyl, -(C₁-C₄)-alkyl, -O-R¹⁵, wherein R¹⁵ is hydrogen or -(C₁-C₄)-alkyl, -N(R¹⁵)-R¹⁶, wherein R¹⁵ and R¹⁶ are, independently of each other, hydrogen or -(C₁-C₄)-alkyl, halogen, or a keto radical,

-C(O)-R¹⁵, wherein R¹⁵ is hydrogen or -(C₁-C₄)-alkyl,
-C(O)-OR¹⁵, wherein R¹⁵ is hydrogen or -(C₁-C₄)-alkyl, or
-C(O)-N(R¹⁷)-R¹⁸, wherein R¹⁷ and R¹⁸ are, independently of each other, hydrogen, -(C₁-C₄)-alkyl-OH, -O-(C₁-C₄)-alkyl or -(C₁-C₄)-alkyl;

R23 is hydrogen or -(C₁-C₄)-alkyl; and

R24 is a heteroaryl radical selected from pyrrole, furan, thiophene, imidazole, pyrazole, oxazole, isoxazole, thiazole, isothiazole, tetrazole, 1,2,3,5-oxathiadiazole-2-oxide, triazolones, oxadiazolones, isoxazolones, oxadiazolidinedione, triazole, 3-hydroxypyrro-2,4-dione, 5-oxo-1,2,4-thiadiazole, pyridine, pyrazine, pyrimidine, indole, isoindole, indazole, phthalazine, quinoline, isoquinoline, quinoxaline, quinazoline, cinnoline, β-carboline and benzo fused cyclopenta derivatives or cyclohexa derivatives of these heteroaryl radicals, wherein the heteroaryl radical is optionally substituted, one, two or three times, independently of each other, by -(C₁-C₅)-alkyl, -(C₁-C₅)-alkoxy, halogen, nitro, amino, trifluoromethyl, hydroxyl, hydroxyl, hydroxyl, methylenedioxy, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl or -(C₁-C₄)-alkoxycarbonyl, or

an aryl radical selected from phenyl, naphthyl, 1-naphthyl, 2-naphthyl, biphenylyl, 2-biphenylyl, 3-biphenylyl and 4-biphenylyl, anthryl and fluorenyl, wherein the aryl radical is

optionally substituted, one, two or three times, independently of each other, by $-(C_1-C_5)$ -alkyl, $-(C_1-C_5)$ -alkoxy, halogen, nitro, amino, trifluoromethyl, hydroxyl, hydroxy- (C_1-C_4) -alkyl, methylenedioxy, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl or $-(C_1-C_4)$ -alkoxycarbonyl.

5

7. The method according to claim 6, wherein, for formula Ia,

E is N or CH;

10 M is N or CH;

R21 is hydrogen,

halogen,

 $-(C_1-C_4)$ -alkyl,

15 -CN,

 $-CF_3$

-OR¹⁵, wherein, R^{15} is hydrogen atom or $-(C_1-C_4)$ -alkyl,

 $-N(R^{15})-R^{16}$ wherein, R^{15} and R^{16} are, independently of each other, hydrogen or $-(C_1-C_4)$ -alkyl,

-C(O)- R^{15} , wherein, R^{15} is hydrogen or –(C₁-C₄)-alkyl, or

 $-S(O)_x-R^{15}$, wherein, x is zero, 1 or 2, and R^{15} is hydrogen or $-(C_1-C_4)$ -alkyl;

R22 is a heteroaryl radical selected from imidazole, isothiazole, isoxazole, 2-isoxazolidine,

isoxazolidine, isoxazolone, 1,3,4-oxadiazole, oxadiazolidinedione, 1,2,3,5-oxadiazolone, oxazole, 5-oxo-4,5-dihydro[1,3,4]oxadiazole, tetrazole, thiadiazole, triazole and triazolone, wherein the heteroaryl radical is optionally substituted one, two or three times by a **keto radical**, **halogen**, or $-(C_1-C_2)$ -alkyl,

-C(O)-N(R^{17})- R^{18} , wherein R^{17} and R^{18} are hydrogen, -(C_1 - C_2)-alkyl-OH, -O-(C_1 - C_2)-alkyl, or -(C_1 - C_4)-alkyl;

30

20

25

R23 is hydrogen, methyl or ethyl;

R24 is a heteroaryl radical selected from unsaturated, partially saturated and completely

saturated rings which are derived from pyridine, pyrazine, pyrimidine, pyridazine, pyrrole,

furan, thiophene, imidazole, pyrazole, oxazole, isoxazole, thiazole, triazole or isothiazole,
wherein the heteroaryl radical is optionally substituted, one, two or three times, independently of each
other by -(C₁-C₄)-alkyl, -(C₁-C₄)-alkoxy, F, Cl, I, Br, nitro, amino, trifluoromethyl, hydroxyl,

hydroxy- (C_1-C_4) -alkyl, methylenedioxy, ethylenedioxy, formyl, acetyl, cyano, hydroxycarbonyl, aminocarbonyl or $-(C_1-C_4)$ -alkoxycarbonyl, or

phenyl, wherein, the phenyl is optionally substituted one, two or three times, independently of each other, by F, Cl, I, Br, CF₃, -OH, -(C_1 - C_4)-alkyl or -(C_1 - C_4)-alkoxy; and

5

R31 is hydrogen,

halogen,

 $-(C_1-C_4)$ -alkyl,

-CN,

10

15

20

25

30

35

 $-CF_3$,

-OR¹⁵, wherein, R¹⁵ is hydrogen atom or -(C₁-C₄)-alkyl,

-N(R^{15})- R^{16} wherein, R^{15} and R^{16} are, independently of each other, hydrogen or –(C_1 - C_4)-alkyl,

-C(O)- R^{15} , wherein, R^{15} is hydrogen or -(C_1 - C_4)-alkyl, or

-S(O)_x-R¹⁵, wherein, x is zero, 1 or 2, and R¹⁵ is hydrogen or -(C₁-C₄)-alkyl.

- 8. The method according to claim 2, wherein the compound of formula I is N-[(S)-2-diphenylamino-1-(5-oxo-4,5-dihydro[1,3,4]oxadiazol-2-yl)ethyl]-2-(2-methylaminopyrimidin-4-yl)-1H-indole-5-carboxamide or N-((S)-1-carbamoyl-2-diphenylamino-ethyl)-2-(2-methylaminopyrimidin-4-yl)-1H-benzimidazole-5-carboxamide.
- 9. The method according to claim 2, wherein the compound of formula Ia is N-[(S)-2-diphenylamino-1-(5-oxo-4,5-dihydro[1,3,4]oxadiazol-2-yl)ethyl]-2-(2-methylaminopyrimidin-4-yl)-1H-indole-5-carboxamide or N-((S)-1-carbamoyl-2-diphenylamino-ethyl)-2-(2-methylaminopyrimidin-4-yl)-1H-benzimidazole-5-carboxamide.
- 10. The method according to claim 6, wherein the compound of formula I is N-[(S)-2-diphenylamino-1-(5-oxo-4,5-dihydro[1,3,4]oxadiazol-2-yl)ethyl]-2-(2-methylaminopyrimidin-4-yl)-1H-indole-5-carboxamide or N-((S)-1-carbamoyl-2-diphenylamino-ethyl)-2-(2-methylaminopyrimidin-4-yl)-1H-benzimidazole-5-carboxamide.
- 11. The method according to claim 6, wherein the compound of formula Ia is, wherein the compound N-[(S)-2-diphenylamino-1-(5-oxo-4,5-dihydro[1,3,4]oxadiazol-2-yl)ethyl]-2-(2-methylaminopyrimidin-4-yl)-1H-indole-5-carboxamide or N-((S)-1-carbamoyl-2-diphenylamino-ethyl)-2-(2-methylaminopyrimidin-4-yl)-1H-benzimidazole-5-carboxamide.

- 12. A method for producing a pharmaceutical for the prophylaxis and therapy of acute pain or chronic pain, in a patient in need thereof, comprising administering to such patient a pharmaceutically effective amount of a compound according to claim 1.
- from chronic musculoskeletal diseases, a pain associated with menstruation, a pain associated with osteoarthritis or rheumatoid arthritis, a pain associated with intestinal inflammation, a pain associated with cardiac muscle inflammation, a pain associated with multiple sclerosis, a pain associated with neuritis, a pain associated with a carcinoma and a sarcoma, a pain associated with AIDS, a pain associated with chemotherapy, an amputation pain, a trigeminus neuralgia, a headache, and a neuropathic pain.
 - 14. The method according to claim 11, wherein the acute pain is an acute pain selected from a pain following injury, a post-operative pain, a pain associated with an acute attack of gout, and an acute pain following jaw-bone surgical intervention.
 - 15. The method according to claim 12 wherein the chronic musculoskeletal disease is a back pain.
- The method according to claim 12 wherein the headache is a migraine cephalalgia.
 - 17. The method according to claim 12 wherein the neuropathic pain is post-herpes zoster neuralgia.

25

15